

data value for the missing parameter shall be used in the calculations, according to the following requirements:

(a) Where anode or paste consumption data are missing, CO₂ emissions

can be estimated from aluminum production per Equation F-8 of this section.

$$\text{ECO}_2 = \text{EF}_p \times \text{MP}_p + \text{EF}_s \times \text{MP}_s \quad (\text{Eq. F-8})$$

Where:

ECO₂ = CO₂ emissions from anode and/or paste consumption, metric tons CO₂.

EF_p = Prebake technology specific emission factor (1.6 metric tons CO₂/metric ton aluminum produced).

MP_p = Metal production from prebake process (metric tons Al).

EF_s = Sderberg technology specific emission factor (1.7 metric tons CO₂/metric ton Al produced).

MP_s = Metal production from Sderberg process (metric tons Al).

(b) For other parameters, use the average of the two most recent data points after the missing data.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79156, Dec. 17, 2010]

§ 98.66 Data reporting requirements.

In addition to the information required by § 98.3(c), you must report the following information at the facility level:

(a) Annual aluminum production in metric tons.

(b) Type of smelter technology used.

(c) The following PFC-specific information on an annual basis:

(1) Perfluoromethane emissions and perfluoroethane emissions from anode effects in all prebake and all Sderberg electrolysis cells combined.

(2) Anode effect minutes per cell-day (AE-mins/cell-day), anode effect frequency (AE/cell-day), anode effect duration (minutes). (Or anode effect overvoltage factor ((kg CF₄/metric ton Al)/(mV/cell day)), potline overvoltage (mV/cell day), current efficiency (%).)

(3) Smelter-specific slope coefficients (or overvoltage emission factors) and the last date when the smelter-specific-slope coefficients (or overvoltage emission factors) were measured.

(d) Method used to measure the frequency and duration of anode effects (or overvoltage).

(e) The following CO₂-specific information for prebake cells:

(1) Annual anode consumption.

(2) Annual CO₂ emissions from the smelter.

(f) The following CO₂-specific information for Sderberg cells:

(1) Annual paste consumption.

(2) Annual CO₂ emissions from the smelter.

(g) Smelter-specific inputs to the CO₂ process equations (e.g., levels of sulfur and ash) that were used in the calculation, on an annual basis.

(h) Exact data elements required will vary depending on smelter technology (e.g., point-feed prebake or Sderberg) and process control technology (e.g., Pechiney or other).

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79156, Dec. 17, 2010]

§ 98.67 Records that must be retained.

In addition to the information required by § 98.3(g), you must retain the following records:

(a) Monthly aluminum production in metric tons.

(b) Type of smelter technology used.

(c) The following PFC-specific information on a monthly basis:

(1) Perfluoromethane and perfluoroethane emissions from anode effects in prebake and Sderberg electrolysis cells.

(2) Anode effect minutes per cell-day (AE-mins/cell-day), anode effect frequency (AE/cell-day), anode effect duration (minutes). (Or anode effect overvoltage factor ((kg CF₄/metric ton Al)/(mV/cell day)), potline overvoltage (mV/cell day), current efficiency (%).)

(3) Smelter-specific slope coefficients and the last date when the smelter-specific-slope coefficients were measured.

(d) Method used to measure the frequency and duration of anode effects

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(or to measure anode effect overvoltage and current efficiency).

(e) The following CO₂-specific information for prebake cells:

(1) Annual anode consumption.

(2) Annual CO₂ emissions from the smelter.

(f) The following CO₂-specific information for Sderberg cells:

(1) Annual paste consumption.

(2) Annual CO₂ emissions from the smelter.

(g) Smelter-specific inputs to the CO₂ process equations (e.g., levels of sulfur

and ash) that were used in the calculation, on an annual basis.

(h) Exact data elements required will vary depending on smelter technology (e.g., point-feed prebake or Sderberg) and process control technology (e.g., Pechiney or other).

§ 98.68 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

TABLE F-1 TO SUBPART F OF PART 98—SLOPE AND OVERVOLTAGE COEFFICIENTS FOR THE CALCULATION OF PFC EMISSIONS FROM ALUMINUM PRODUCTION

Technology	CF ₄ slope coefficient [(kg CF ₄ /metric ton Al)/ (AE-Mins/cell-day)]	CF ₄ overvoltage coefficient [(kg CF ₄ /metric ton Al)/(mV)]	Weight fraction C ₂ F ₆ /CF ₄ [(kg C ₂ F ₆ /kg CF ₄)]
Center Worked Prebake (CWPB)	0.143	1.16	0.121
Side Worked Prebake (SWPB)	0.272	3.65	0.252
Vertical Stud Sderberg (VSS)	0.092	NA	0.053
Horizontal Stud Sderberg (HSS) ...	0.099	NA	0.085

[74 FR 79156, Dec. 17, 2010]

TABLE F-2 TO SUBPART F OF PART 98—DEFAULT DATA SOURCES FOR PARAMETERS USED FOR CO₂ EMISSIONS

Parameter	Data source
CO ₂ Emissions from Prebake Cells (CWPB and SWPB)	
MP: metal production (metric tons Al)	Individual facility records.
NAC: net annual prebaked anode consumption per metric ton Al (metric tons C/metric tons Al)	Individual facility records.
S _a : sulfur content in baked anode (percent weight)	2.0.
Ash _a : ash content in baked anode (percent weight)	0.4.
CO ₂ Emissions From Pitch Volatiles Combustion (CWPB and SWPB)	
MP: metal production (metric tons Al)	Individual facility records.
PC: annual paste consumption (metric ton/metric ton Al)	Individual facility records.
CSM: annual emissions of cyclohexane soluble matter (kg/metric ton Al)	HSS: 4.0. VSS: 0.5.
BC: binder content of paste (percent weight)	Dry Paste: 24. Wet Paste: 27.
S _p : sulfur content of pitch (percent weight)	0.6.
Ash _p : ash content of pitch (percent weight)	0.2.
H _p : hydrogen content of pitch (percent weight)	3.3.
S _c : sulfur content in calcined coke (percent weight)	1.9.
Ash _c : ash content in calcined coke (percent weight)	0.2.
CD: carbon in skimmed dust from Sderberg cells (metric ton C/metric ton Al)	0.01.
CO ₂ Emissions from Pitch Volatiles Combustion (VSS and HSS)	
GA: initial weight of green anodes (metric tons)	Individual facility records.
H _a : annual hydrogen content in green anodes (metric tons)	0.005 × GA.
BA: annual baked anode production (metric tons)	Individual facility records.
WT: annual waste tar collected (metric tons)	(a) 0.005 × GA. (b) insignificant.
(a) Riedhammer furnaces	
(b) all other furnaces	
CO ₂ Emissions From Bake Furnace Packing Materials (CWPB and SWPB)	
PCC: annual packing coke consumption (metric tons/metric ton baked anode)	0.015.
BA: annual baked anode production (metric tons)	Individual facility records.